

CLAIMS

What is claimed is:

1 1. A method comprising:

2 storing a first set of at least one message at a client system;

3 sending a first request to a server system, said first request including a copy of the first set
4 of messages; and

5 waiting to receive a first response at the client system from the server system, said first
6 response including a first indication of which messages of the first set of messages were received
7 from the client system in the first request, wherein requests and responses are formatted
8 according to a first protocol, said first protocol operative to traverse a firewall.

1 2. The method of claim 1 further comprising:

2 storing from zero to N first additional messages at the client system;

3 sending a second request to the server system if a particular number of the first additional
4 messages accumulate, said second request including a copy of the first additional messages
5 stored at the client system;

6 sending the second request to the server system if a particular time passes before
7 receiving the first response, said second request including a copy of the first set of messages and
8 a copy of the first additional messages stored at the client system;

9 removing the first indicated messages from the client system if the first response is
10 received; and

11 sending the second request to the server system if the first response is received, said
12 second request including a copy of any messages stored at the client system.

1 3. The method of claim 2 further comprising:

2 storing a second set of at least one message at the server system;

3 waiting to receive the first request and the second request from the client system;

4 sending the first response to the client system if the first request is received and if a

5 particular number of the second set of messages accumulate at the server system, said first

6 response further including a copy of the second set of messages; and

7 sending the first response to the client system if the second request is received, said first

8 response further including a copy of the second set of messages, and said first response

9 corresponding to the first request.

1 4. The method of claim 3 further comprising:

2 sending a third request to the server system in response to receiving the first response,

3 said third request including a second indication of which messages of the second set of messages

4 were received from the server system.

1 5. The method of claim 4 further comprising:

2 storing from zero to M second additional messages at the server system;

3 waiting to receive the third request from the client system;

4 removing the second indicated messages from the server system in response to receiving

5 the third request; and

6 sending a second response to the client system in response to receiving the third request,
7 said second response including a copy of any messages stored at the server system, and said
8 second response corresponding to the second request.

1 6. The method of claim 1 wherein the firewall prevents communications formatted according to
2 a second protocol between the client system and the server system.

1 7. The method of claim 6 wherein the first protocol is a HyperText Transfer Protocol (HTTP)
2 and the second protocol is a Transmission Control Protocol/ Internet Protocol (TCP/IP).

1 8. The method of claim 6 wherein the storing, sending, and waiting are performed automatically
2 in response to detection of the firewall.

1 9. A method comprising:

2 storing a first set of one or more messages at a server system;

3 waiting to receive a first request and a second request from a client system;

4 sending a first response to the client system if the first request is received and a particular
5 number of messages accumulate at the server system, said first response including a copy of the
6 first set of messages; and

7 sending the first response to the client system if the second request is received, said first
8 response including a copy of the first set of messages, and said first response corresponding to
9 the first request;

10 wherein requests and responses are formatted according to a protocol, said protocol
11 operative to traverse a firewall.

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1 10. The method of claim 9 wherein the first request includes a copy of a second set of one or
2 more messages stored at the client system, and the first response includes an indication of which
3 messages of the second set of messages were received from the client system in the first request.

1 11. The method of claim 9 further comprising:
2 storing additional messages at the server system;
3 waiting to receive a third request from the client system, said third request including an
4 indication of which messages of the first set of messages were received by the client system;
5 removing the indicated messages from the server system in response to receiving the third
6 request; and
7 sending a second response to the client system in response to receiving the third request,
8 said second response including a copy of any messages stored at the server system, and said
9 second response corresponding to the second request.

1 12. An apparatus comprising:
2 a client system to store messages, to send a request to a server system, said request
3 including a copy of the messages, and to receive a response at the client system from the server
4 system, said response including an indication of which messages of the included messages were
5 received from the client system in the request, wherein the request and the response are formatted
6 according a protocol, said protocol operative to traverse a firewall.

1 13. The apparatus of claim 12 wherein the client system includes:
2 a buffer to store the messages; and

3 a client process to send the request and receive the response over a HyperText Transfer
4 Protocol (HTTP) gateway.

1 14. An apparatus comprising:

2 a server system to store messages, to receive a first request and a second request from a
3 client system, and to send a response corresponding to the first request to the client system in
4 response to receiving the second request, said response including a copy of the first set of
5 messages, wherein the first and second requests and the response are formatted according to a
6 protocol, said protocol operative to traverse a firewall.

1 15. The apparatus of claim 14 wherein the server system includes:

2 a buffer to store the messages; and

3 a server process to receive the first and second requests and to send the response over a
4 HyperText Transfer Protocol (HTTP) server.

1 16. A machine-readable storage medium having stored thereon machine executable instructions,
2 the execution of said instructions implements a method comprising:

3 storing a set of at least one message at a client system;

4 sending a request to a server system, said request including a copy of the set of messages;

5 and

6 waiting to receive a response at the client system from the server system, said response

7 including an indication of which messages of the set of messages were received from the client

8 system in the request, wherein the request and the response are formatted according to a protocol,

9 said protocol operative to traverse a firewall.

1 17. A machine-readable storage medium having stored thereon machine executable instructions,
2 the execution of said instructions implements a method comprising:

3 storing a set of one or more messages at a server system;

4 waiting to receive a first request and a second request from a client system;

5 sending a response to the client system if the first request is received and a particular
6 number of messages accumulate at the server system, said response including a copy of the set of
7 messages;

8 sending the response to the client system if the second request is received, said response
9 including a copy of the set of messages, and said response corresponding to the first request;

10 wherein the first and second requests and the response are formatted according to a
11 protocol, said protocol operative to traverse a firewall.